

## CLAIMS

What is claimed is:

1. A wireless local area network adapted for use by users traveling on a mobile platform, the network comprising:

a network server located on the mobile platform; and

a plurality of network access points connected to the server, each access point accessible wirelessly by at least one user portable electronic device over one of a plurality of non-overlapping network frequency channels.

2. The wireless local area network of claim 1 wherein the network access points are spaced apart within an interior area of the platform.

3. The wireless local area network of claim 1 wherein at least one of the access points is configured so that a line replaceable unit of an aircraft system and an antenna of the access point are separated by a distance at which a field strength of the antenna is less than interference thresholds of the line replaceable unit.

4. The wireless local area network of claim 1 wherein each of the network access points comprises an antenna mounted in an overhead area of the mobile platform.

5. The wireless local area network of claim 1 wherein each of the network access points is configured to provide a wireless link only to portable electronics devices predetermined to meet predetermined standards for at least one of interference, health and safety.

6. The wireless local area network of claim 5 wherein each of the network access points is further configured to ignore any portable electronic device not predetermined to meet the predetermined standards.

7. The wireless local area network of claim 1 wherein each of the network access points is configured to transmit signals to and receive signals from a portable electronic device within a cell area, and is further configured to transmit signals to and receive signals from a portable electronic device that is roaming into the cell area from a cell area associated with another of the access points.

8. The wireless local area network of claim 1 wherein each of the network access points is configured to transmit and receive signals using a spread-spectrum modulation method.

9. The wireless local area network of claim 8 wherein each of the network access points is configured to transmit and receive signals using direct sequence spread spectrum transmission.

10. The wireless local area network of claim 1 wherein each of the access points comprises an antenna configured to communicate over a channel not being used by an adjacent access point antenna.

11. The wireless local area network of claim 9 wherein at least one of the channels is assigned to more than one of the access points.

12. The wireless local area network of claim 1 wherein each of the access points transmits at a radiated power between 1 and 5 milliwatts.

13. The wireless local area network of claim 1 wherein each of the access points communicates with the portable electronic devices at frequencies at and above about 2.40 GHz.

14. The wireless local area network of claim 13 wherein each of the access points communicates with the portable electronic devices at between about 2.40 and 2.483 GHz.

15. The wireless local area network of claim 1 further comprising at least one antenna system configured to transmit to and receive data from a ground-based system.

16. A method for providing, to users on board a mobile platform, a wireless local area network operating at a given frequency band, the method comprising the steps of:

distributing use of a plurality of channels in the frequency band to a plurality of network access points having antennas spaced apart within an interior area of the mobile platform, the distributing step performed such that no two adjacent access point antennas use the same channel; and

enabling wireless access, by user portable electronic devices, to the access points when the portable electronic devices are within a given proximity to at least one of the access point antennas.

17. The method of claim 16 further comprising the step of allowing access to an access point only by a user portable device that meets predetermined standards for at least one of health, safety and electromagnetic interference.

18. The method of claim 16 further comprising the step of determining a cell size for each access point.

19. The method of claim 18 wherein the step of determining cell size comprises the steps of:

determining an effective cell radius for an access point antenna; and

locating the access point antenna so that users of the access point are within the cell radius relative to the antenna.

20. The method of claim 16 wherein the plurality of channels comprise non-overlapping channels.

21. The method of claim 20 wherein the non-overlapping channels comprise three channels.

22. The method of claim 16 wherein the step of distributing use of a plurality of channels comprises assigning a channel to more than one access point.

23. A wireless local area network configured to operate at a given spectrum band and adapted for use by users traveling on an aircraft, the network comprising:

a network server located on the aircraft; and

a plurality of network access points connected to the server and configured to transmit wirelessly to at least one user portable electronic device using direct sequence spread spectrum transmission.

24. The wireless local area network of claim 23 wherein each of the access points is configured to transmit at a radiated power of between one and five milliwatts.

25. The wireless local area network of claim 23 wherein more than one of the access points is configured to transmit over the same channel of the network spectrum.